

## CLAIMS:

1. A method of decoding video data in a video decoder (50) to regenerate a corresponding sequence of images, characterized in that the method includes the steps of:
  - (a) arranging for the decoder (50) to include processing means (70) coupled to an associated main data memory (60) and a data cache memory (80);
  - 5 (b) receiving the video data including anchor picture data in compressed form at the decoder and storing the data in the main memory (60);
  - (c) processing the compressed video data in the processing means (70) to generate corresponding macroblock data including motion vectors describing motional differences between the images in the sequence; and
  - 10 (d) applying motion compensation in the processing means (70) to generate from the macroblock data and one or more anchor pictures the corresponding sequence of decoded images;

the method being arranged to apply the motion compensation such that the motion vectors derived from the macroblocks used for reconstructing the sequence of images are analyzed

15 and macroblocks accordingly sorted so as to provide for more efficient data transfer between the main memory (60) and the processing means (70).
2. A method according to Claim 1, wherein groups of macroblocks transferred between the processing means and the memory correspond to spatially neighboring macroblocks in one or more of the images.
- 20 3. A method according to Claim 1, wherein the sequence of images includes at least one initial reference image from which subsequent images are generated by way of applying motion compensation using the motion vectors.
- 25 4. A method according to Claim 3, wherein one or more of the images are represented in one or more corresponding video object planes in the memory, said one or more planes including data relating to at least one of coding contour information, motion information and textural information.

5. A method according to Claim 4, wherein the video object planes are arranged to include one or more video objects which are mapped by said motion compensation in the processing means from one or more earlier images to one or more later images in the sequence.
6. A method according to any one of the preceding claims, wherein the method in step (a) is arranged to receive video data read from a data carrier, preferably an optically readable and/or writable data carrier, and/or a data communication network.
- 10 7. A method according to any one of the preceding claims, said method being arranged to be compatible with one or more block-based video compression schemes, for example MPEG standards.
- 15 8. A video decoder (50) for decoding video data (ENC(VI)) to regenerate a corresponding sequence of images (VO), characterized in that the decoder (50) includes:
  - (a) receiving means for acquiring the video data (ENC(VI)) including anchor picture data in compressed form at the decoder (50) and storing the data in the main memory (60);
  - 20 (b) processing means (70) for:
    - (i) processing the compressed video data to generate corresponding macroblock data including motion vectors describing motional differences between the images in the sequence; and
    - (ii) applying motion compensation using the motion vectors to generate from the
  - 25 macroblock data and one or more anchor pictures the corresponding sequence of decoded images;
  - the decoder (50) being operable to apply the motion compensation such that the motion vectors derived from the macroblocks used for reconstructing the sequence of images are analyzed and macroblocks accordingly sorted so as to provide for more efficient data transfer
  - 30 between the main memory (60) and the processing means (70).
9. A decoder according to Claim 8, the decoder being arranged to process the sequence of images including at least one initial reference image from which subsequent images are generated by way of applying motion compensation using the motion vectors.

10. A decoder according to Claim 9, wherein one or more of the images are represented in one or more corresponding video object planes in the memory, said one or more planes including data relating to at least one of coding contour information, motion 5 information and textural information.